

AMENDMENTS TO THE CLAIMS

Please amend claims 1, 6, 14 and 19, such that the status of the claims is as follows:

1. (Currently amended) A magnetic element comprising at least one layer of a nanophase magnetic material incorporating nanoclusters of a first magnetic material containing approximately 200 to 800 atoms per nanocluster surrounded by a second magnetic material, the nanoclusters having a size of about 1 nanometer to about 5 nanometers, and the layer of nanophase magnetic material having a magnetic saturation moment of greater than 2.4-T.

2. (Canceled)

3. (Previously presented) The magnetic element of claim 1 wherein the first magnetic material is selected from the group consisting of: Fe, Mn, Co, Ni and alloys thereof.

4. (Previously presented) The magnetic element of claim 3 wherein the nanoclusters are coated in flight with second magnetic material selected from the group consisting of: Fe, Mn, Ni, Co and alloys thereof.

5. (Previously presented) The magnetic element of claim 3 wherein the nanoclusters are adsorbed with an electron-donating material selected from the group consisting of: hydrogen and nitrogen.

6. (Currently amended) The magnetic element of claim 1 wherein the nanophase magnetic material comprises a nano-laminated cluster film having a thickness of about 5 nanometers to about 30 nanometers.

7. (Previously presented) The magnetic element of claim 6 wherein the nano-laminated cluster film comprises:

at least one layer of nanoclusters of the first magnetic material with magnetic saturation moments greater than 2.4 T; and
a plurality of magnetic matrix layers wherein the nanocluster layers are approximately alternating with the matrix layers.

8. (Previously presented) The magnetic element of claim 7 wherein the first magnetic material is selected from the group consisting of: Fe, Mn, Ni, Co and alloys thereof.

9. (Previously presented) The magnetic element of claim 7 wherein the matrix is a vacuum-deposited magnetic material.

10. (Previously presented) The magnetic element of claim 7 wherein the matrix is formed of a material selected from the group consisting of: Co, Fe and alloys thereof.

11. (Previously presented) The magnetic element of claim 7 wherein the number of nanocluster layers and matrix layers is approximately between 2 and 15.

12. (Previously presented) The magnetic write element of claim 1 wherein the nanophase magnetic material forms part of a write pole.

13. (Previously presented) The magnetic element of claim 1 wherein the nanophase magnetic material forms an SUL layer of perpendicular recording media.

14. (Currently amended) A magnetic write element having a write gap, the element comprising:
a bottom pole;
a first magnetic layer located upon the bottom pole at the write gap, wherein the first magnetic layer includes nanophase magnetic material incorporating

nanoclusters of a first magnetic material containing approximately 200 to 800 atoms per nanocluster surrounded by a second magnetic material, the nanoclusters having a size of about 1 nanometer to about 5 nanometers, and the first magnetic layer having a magnetic saturation moment of greater than 2.4 T; and

a second magnetic layer adjacent to the write gap opposite to the first magnetic layer, wherein the second magnetic layer includes nanophase magnetic material incorporating nanoclusters of a first magnetic material containing approximately 200 to 800 atoms per nanocluster surrounded by a second magnetic material, the nanoclusters having a size of about 1 nanometer to about 5 nanometers, and the second magnetic layer having a magnetic saturation moment of greater than 2.4 T, and
a third magnetic layer plated upon the second magnetic layer thereby forming a top pole.

15. (Previously presented) The magnetic write element of claim 14 wherein the nanophase magnetic material comprises coated magnetic nanoclusters.

16. (Previously presented) The magnetic write element of claim 15 wherein the coated magnetic nanoclusters comprise nanoclusters of magnetic materials selected from the group consisting of: Fe, Mn, Co, Ni and alloys thereof.

17. (Original) The magnetic write element of claim 16 wherein the nanoclusters are coated in flight with a magnetic material selected from the group consisting of: Fe, Mn, Ni, Co and alloys thereof.

18. (Original) The magnetic write element of claim 16 wherein the nanoclusters are adsorbed with an electron-donating material selected from the group consisting of: hydrogen and nitrogen.

19. (Currently amended) The magnetic write element of claim 14 wherein the nanophase magnetic materials comprises nano-laminated cluster film having a thickness of about 5 nanometers to about 30 nanometers.

20. (Previously presented) The magnetic write element of claim 19 wherein the nano-laminated cluster film comprises:

at least one layer of nanoclusters of first magnetic material with magnetic saturation moments greater than 2.4 T; and
a plurality of magnetic matrix layers wherein the nanocluster layers are approximately alternating with the matrix layers.

21. (Previously presented) The magnetic write element of claim 20 wherein the first magnetic material is selected from the group consisting of: Fe, Mn, Ni, Co and alloys thereof.

22. (Previously presented) The magnetic write element of claim 20 wherein the matrix is a vacuum-deposited magnetic moment enhancing material.

23. (Previously presented) The magnetic write element of claim 20 wherein the matrix is formed of a material selected from the group consisting of: Co, Fe and alloys thereof.